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| 10/506,461      | 07/11/2005  | Shigeru Sugaya       |                     | 8945             |

  

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| 530  | 7590 | 01/11/2008 |
| LERNER, DAVID, LITTENBERG,<br>KRUMHOLZ & MENTLIK<br>600 SOUTH AVENUE WEST<br>WESTFIELD, NJ 07090 |      |            |

  

|               |  |
|---------------|--|
| EXAMINER      |  |
| CASCA, FRED A |  |

  

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| ART UNIT | PAPER NUMBER |
| 2617     |              |

  

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| 01/11/2008 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/506,461 | <b>Applicant(s)</b><br>SUGAYA, SHIGERU |  |
|                              | <b>Examiner</b><br>Fred A. Casca     | <b>Art Unit</b><br>2617                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/20/2006</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Title Objections*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### IDS

2. The information disclosure statement filed October 20, 2006, specifically the documents JP-2000-358059, JP-2002-223217 and JP-2003-229869 are not in English, and it has been placed in the application file and considered only to the best examiner's abilities provided by the drawings.

### *Claim Rejections – 35 U.S.C. 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 11 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu (US Patent No. 7,103,371 B1).

Referring to claim 1, Liu discloses a wireless communication apparatus communicating with another wireless communication apparatus in an

autonomous distributed network without a designated control station apparatus (abstract and Fig. 1A, "Ad hoc"), said wireless communication apparatus comprising frame period setting means for setting a predetermined frame period for each wireless communication apparatus (col. 1, lines 28-55, "TDMA", note that frame is setting is performed in TDMA schemes); data slot setting means for setting slots serving as data transmission units (Fig. 7B-7B and col. 11, line 20 to col. 12, line 41, "update slots", "select slots for return path"); and reception slot setting means for setting at least one reception slot for receiving a signal in said predetermined frame period (Fig. 7B-7B and col. 11, line 20 to col. 12, line 41, "select slots for return path").

Referring to claim 2, Liu discloses the wireless communication apparatus as set forth in claim 1, further comprising transmitting means for transmitting a beacon signal to another wireless communication apparatus at a predetermined timing of said predetermined frame period, wherein the beacon signal has information about a timing of the reception slot set by said reception slot setting means; and receiving means for receiving a signal transmitted by said another wireless communication apparatus (Fig. 1A, and col. 5, lines 20-45, "communications between nodes of different islands").

Referring to claim 3, Liu discloses the wireless communication apparatus as set forth in claim 2, wherein said receiving means receives the signal at a timing of the reception slot set by said reception slot setting means (Fig. 2-6 and col. 1, lines 44-55).

Referring to claim 4, Liu discloses the wireless communication apparatus as set forth in claim 1, further comprising beacon transmitting means for transmitting a beacon signal at a timing of a head of the predetermined frame period (Fig. 1A-6 and col. 1, lines 28-41, note that signal beacon transmission is inherent in TDMA).

Referring to claim 5, Liu discloses the wireless Communication apparatus as set forth in claim 1, further comprising data transmitting means for transmitting data to another wireless communication apparatus (Fig. 1-7B, and col. 8, lines 20-40, "transmission slots"), storage means for storing timings of reception slots of other wireless communication apparatuses, and control means for making said data transmitting means transmit data at a timing of a reception slot of said another wireless communication apparatus when there is transmission data to be sent to the other wireless communication apparatus (Fig. 1 and 7A-7B and col. 8, lines 20-60).

Referring to claim 11, claim 11 defines a wireless communication system reciting features analogous to the features of the apparatus of claim 1, thus Liu discloses all elements of claim 11 (please see the rejection of claim 1 above).

Referring to claim 15, claim 15 defines a wireless communication method reciting features analogous to the features of the apparatus of claim 1, thus Liu discloses all elements of claim 15 (please see the rejection of claim 1 above)

Referring to claim 16, Liu discloses the wireless communication method as set forth in claim 15, further comprising transmitting a beacon signal that has information about the a timing of the set reception slot and informing its presence to another wireless communication apparatus located in the neighborhood (Fig. 1A-7B, and col. 5, lines 20-45, "communications between nodes of different islands").

Referring to claim 17, Liu discloses the wireless communication method as set forth in claim 15, further comprising having a wireless communication apparatus that engages in reception processing at a timing of said set reception slot and receives data transmitted from another wireless communication apparatus (Fig. 2-7B).

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12-13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US Patent No. 7,103,371 B1).

Referring to claims 12, Liu disclose the wireless system of claim 11.

Liu does not specifically disclose beacon signal at a timing of a head of frame period.

It would have been an obvious design choice to modify the system of Lie by providing the beacon signal to be at the timing of the head of the frame signal since the applicant has not disclosed that having the beacon signal at the head of the frame solves any stated problems or is for any particular purpose and it appears that the placing of the beacon signal at any part of the frame would perform equally well.

Referring to claim 13, Liu discloses the wireless communication system as set forth in claim 12, and further disclose timings by which wireless communication apparatuses transmit beacon signals are arranged so as not to overlap each other (Fig. 1A-7B, note that such arrangement is inherent and beacon signals arranged to not overlap each other).

7. Claims 6, 9, 10, 14 and 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US Patent No. 7,103,371 B1) in view of Watanabe (US Pub. No. 2006/0044436 A1).

Referring to claim 6, Liu discloses a wireless communication apparatus for communicating with another wireless communication apparatus in an autonomous distributed network without a designated control station apparatus (abstract and Fig. 1A, "Ad hoc"),

said wireless communication apparatus comprising frame period setting means for setting a predetermined frame period by for each communication apparatus(col. 1, lines 28-55, "TDMA", note that frame is setting is performed in TDMA schemes); data slot setting means for setting slots serving as data transmission units (Fig. 7B-7B and col. 11, line 20 to col. 12, line 41, "update slots", "select slots for return path"); scanning means for receiving a beacon signal transmitted from another wireless communication apparatus over a time of said predetermined frame period (Fig. 1A-6 and col. 1, lines 28-41, note that signal beacon transmission is inherent in TDMA), and Liu does not specifically disclose scan period setting means for setting a scan period longer than said predetermined frame period.

Watanabe discloses that a scan period and frame period can be varied (Fig. 6 and paragraph 58, "1H represents one horizontal scan period, and 1V represents one frame period").

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the apparatus of Liu by incorporating the teachings of Watanabe, for the purpose of providing flexibility in assigning scanning time, thus efficient use of communication resources.

Referring to claim 9, the combination of Liu/Watanabe disclose the wireless communication apparatus as set forth in claim 6, and further disclose beacon transmitting timing control means for controlling a timing of transmission of its own beacon so as not to collide with the beacon of the other



wireless communication apparatus, wherein the scanning means receives a beacon from another wireless communication apparatus (Fig. 1A-7B and their corresponding discussions).

Referring to claim 10, the combination of Liu/Watanabe discloses the wireless communication apparatus as set forth in claim 6, and further disclose transmitting means for transmitting a beacon signal at a predetermined timing of the frame period, wherein the beacon signal has information relating to a beacon transmitting slot transmitted from another wireless communication apparatus obtained by said scanning means (Fig. 1A-7B and their corresponding discussions).

Referring to claim 14, Liu discloses the wireless communication system as set forth in claim 11 and further disclose transmitting means for transmitting a beacon signal that has information about a timing of a reception slot set by said reception slot setting means and informing its presence to another wireless communication apparatus in the neighborhood (Fig. 1A, and col. 5, lines 20-45, "communications between nodes of different islands"), managing means for managing a timing of receiving said beacon signal and a timing of the reception slot (Fig. 1A-7B) and performing scan processing for continuous reception over a time of said predetermined frame period and receiving a beacon signal of another wireless communication apparatus in the neighborhood (Fig. 1A-7B).

Liu does not specifically disclose scan period setting means for setting a scan period longer than said predetermined frame period.

Watanabe discloses that a scan period and frame period can be varied (Fig. 6 and paragraph 58, "1H represents one horizontal scan period, and 1V represents one frame period").

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the apparatus of Liu by incorporating the teachings of Watanabe, for the purpose of providing flexibility in assigning scanning time, thus efficient use of communication resources.

Referring to claim 18, claim 18 defines a wireless communication method reciting features analogous to the features of the system of claim 14, thus the combination of Liu/Watanabe discloses all elements of claim 18 (please see the rejection of claim 14 above).

Referring to claims 19 and 22, claims 19 and 22 defines a wireless communication method reciting features analogous to the features of the system of claim 6, thus the combination of Liu/Watanabe discloses all elements of claim 19 and 22 (please see the rejection of claim 6 above).

Referring to claim 20, the combination of Liu/Watanabe discloses the wireless communication method as set forth in claim 19, and further disclose a step of managing a timing of the reception of the beacon signal transmitted from said other wireless communication apparatus and a timing of the reception slot (Fig. 2-6 and col. 1, lines 44-55).

Referring to claim 21, the combination of Liu/Watanabe disclose the wireless communication method of claim 19 and further disclose storing a timing of a beacon signal from another Wireless communication apparatus located in the neighborhood and a timing of the reception slot (Liu, Fig. 1-7B, and col. 8, lines 20-40, "transmission slots") and engaging in a transmitting operation at a timing of the reception slot of the another communication apparatus when there is data destined for the another wireless communication apparatus (Liu, Fig. 1A, and col. 5, lines 20-45, "communications between nodes of different islands").

Referring to claim 23, the combination of Liu/Watanabe disclose the wireless communication method of claim 22 and further disclose receiving a beacon signal of another wireless communication apparatus located in the neighborhood, managing a timing of the reception of said beacon signal and a timing of the reception slot (Fig. 1A and col. 5, lines 20-45, "communications between nodes of different islands"), and transmitting a signal at the timing of the reception slot of the corresponding wireless communication apparatus when communicating directed to the another wireless communication apparatus (Fig. 1A, and col. 5, lines 20-45, "communications between nodes of different islands").

Referring to claim 24, the combination of Liu/Watanabe disclose the wireless communication method of claim 22 and further disclose the step of receiving a beacon from another wireless communication apparatus by said scanning processing and controlling a timing of transmission of its own beacon so

as not to collide with the beacon of the other wireless communication apparatus (Fig. 1A-7B and col. 1, lines 28-55, "ALOHA, CSMA").

Referring to claim 25, the combination of Liu/Watanabe disclose the wireless communication method of claim 22 and further disclose the step of transmitting a beacon signal at a predetermined timing of the predetermined frame period, wherein the beacon signal has information relating to a beacon transmitting slot transmitted from another wireless communication apparatus obtained by said scanning processing ((Fig. 1A-7B and col. 1, lines 28-67, col. 3, lines 14-55).

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US Patent No. 7,103,371 B1) in view of Watanabe (US Pub. No. 2006/0044436 A1) and further in view of well known prior art (MPEP 2144.03).

Referring to claim 7, the combination of Liu/Watanabe discloses the wireless communication apparatus as set forth in claim 6, further comprising transmitting means for transmitting a signal at the timing of the reception slot of the corresponding wireless communication apparatus when there is data directed to another wireless communication apparatus (Fig. 1A, and col. 5, lines 20-45, "communications between nodes of different islands").

The combination does not disclose managing means for converting a timing of said received beacon signal and a timing of the reception slot into its own slot positions and managing same.

The examiner takes official notice of the fact that converting a timing of a received beacon signal and a timing of the reception slot into its own slot positions and managing same is well known in the art particularly in dynamic slot allocation schemes.

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the apparatus of Liu/Watanabe for the purpose of providing allocating resources efficiently.

Referring to claim 8, the combination of Liu/Watanabe and Well-known art disclose the wireless communication apparatus as set forth in claim 7 and further disclose control means for making transmitting means transmit a signal at the timing of the reception slot of the corresponding wireless communication apparatus when there is data directed to the other wireless communication apparatus, the scanning means obtaining the timing of the beacon signal and the timing of the reception slot from said other wireless communication apparatus (Fig. 1A-7B and their corresponding discussions).

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid, can be reached at (571) 272-7922. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
LESTER G. KINCAID  
UNITED STATES PATENT AND TRADEMARK OFFICE